Mystery Graph

The graph below shows the variable y as a function of x, but it doesn't give a formula for this function. Instead, the graph is labeled with the generic function equation, $y = f(x)$.

Answer these questions based on the graph. Give approximate answers if necessary and state any assumptions you make about any portion of the graph that isn't visible.

1. a. Find $f(4)$. That is, what number would you get for y if you substituted 4 for x?

   b. Find $f(0)$.

   c. Find $f(-1)$.

   d. Find $f(-4)$.

2. Find all solutions to the equation $f(x) = 0$. That is, find all the values of x for which y is 0.

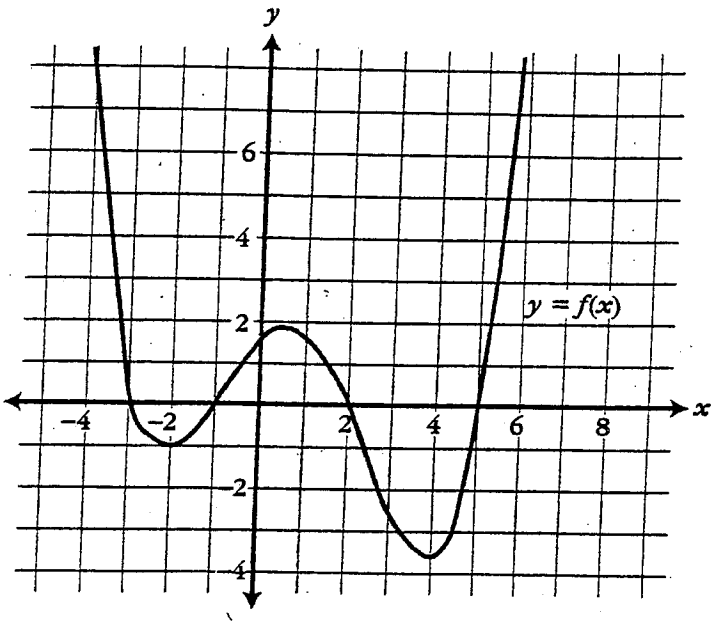
3. Solve each of these equations, giving all possible solutions.

   a. $f(x) = 7$

   b. $f(x) = 1$

   c. $f(x) = -2$

   d. $f(x) = -5$



4. a. Find the maximum point for the part of the function between $x = -3$ and $x = 3$. That is, what point with an x-coordinate between -3 and 3 has the largest y-coordinate?

   b. Find the minimum point for the part of the function between $x = -3$ and $x = 3$.

5. Solve the inequality $f(x) > 0$. That is, find the values for x that give a positive value for y. Describe all possible answers.

2.